

REMARKS

In section 2 of the Final Office Action, dated December 22, 2003, the Examiner rejected claims 1-4 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Applicants respectfully traverse the rejection.

The language of the amendment made to claim 1 in the response to the previous office action, was specifically taken from the description of the application on record. Specifically, page 14, paragraph 1 of the application on file states "...for example, in Fig 2, if node 23 is newly installed, it is possible to remove node 22 from participation in the join process if it is known that there is no possible *connectivity* between nodes 23 and 22. The *non-connectivity* could result from a missing line of sight or due to node 22 coverage angle non-overlapping with those of node 23. In such a case, reducing the set of possible nodes may reduce the time it takes to automatically link the new joining node to the network-nodes 21 and 24."

Clearly then the application on file supports the amendment made to claim 1 that requires *inter alia* "active network nodes transmitting organized invitation data packets on defined sectors, frequencies and timing, based on their relative location and *possible connectivity* to the joining node deduced from sub-sectors already used for existing internal network communication...." Therefore, the Applicants respectfully request that the examiner's rejection under 35 U.S.C. 112, first paragraph, be withdrawn.

In Section 3 of the Final Office Action, claims 1-4, and 37-45 have been rejected under 35 U.S.C. 102(a) as being anticipated by Berger et al. (WO 00/25,485). The Applicants respectfully traverse the rejection.

The examiner bases his rejection on original claim 1 and not on claim 1 as amended in the response to the previous office action. Presumably this is due to the Examiner's conclusion that there is no support in the application on file for the wording of the amended

claim 1. As pointed out above, the support for the amended claim 1 can be found in the specification. The Applicants respectfully request the Examiner reconsider the patentability of present claim 1.

None of the passages cited by the Examiner teaches the feature of active network nodes transmitting organized invitation data packets on defined sectors, frequencies and timing, based on their relative location and possible connectivity to a joining node deduced from sub-sectors already used for existing internal network communication.

Even without this distinction, it is submitted that claim 1 is patentable over the disclosure of Berger. The examiner states that “it is concluded from page 27, last paragraph to page 28, first paragraph of Berger that the “neighbour nodes transmit invitation signals on defined sectors, frequencies and timing based on their relative location and relative angle orientation deduced from sub-sectors.” The Applicants respectfully traverse the Examiner’s assertion. This feature certainly cannot be concluded from the quoted paragraph of Berger. All the quoted paragraph in Berger teaches is that a joining node listens for an invitation signal in a spatial azimuth at a given frequency for a sufficient length of time and having not received an invitation signal scans to the next frequency and azimuth. This passage does not teach an active network node transmitting organized invitation data packets “...based on their relative location and possible connectivity to the joining node...”, as claimed in present claim 1. That is, the cited passages in Berger (or indeed any of the document) do not refer to “active network nodes transmitting organized invitation data packets on defined sectors, frequencies and timing, *based on their relative location and possible connectivity to a joining node deduced from sub-sectors already used for existing internal network communication.*” Claim 1 of the present application is therefore patentably distinguished over the disclosure of Berger. Therefore, the Applicants respectfully request that the examiner’s rejection of claim 1 under 35 U.S.C. 102(a) be withdrawn.

Claims 2-4 depend from claim 1. Consequently, claims 2-4 are patentable at least for the reasons stated above with respect to claim 1 and for the addition features recited therein. Therefore, the Applicants respectfully request that the rejection of claims 2-11 under §102(a) be withdrawn.

On page 5 of the Final Office Action, the Examiner rejected claim 37 based on the assertion that “Berger discloses a method for adding a joining node to a wireless mesh network including network nodes, the method comprising designating at least one network node for initiating communication with the joining node, and at the at least one network node to initiate communication with the joining node scanning on a first sector with highest probability of locating the joining node and subsequently scanning on sectors of lower probability of locating the joining node.” To support the rejection, the Examiner cites the passage at page 27, line 36 to page 28, line 1. The Applicants respectfully point out that it is incorrect to state that the passage at page 27, line 36 to page 28, line 1 teaches scanning at a network node first on a sector with **highest probability** of locating the joining node and to state that the passage at page 28, lines 1 to 2 teaches “subsequently scanning on sectors of **lower probability** of locating the joining node.”

The Applicants draw the Examiner’s attention to page 27, line 36 to page 28, line 1, which states “the scan timer triggers this transition. The radio node listens for an invitation signal in a spatial azimuth at a given frequency for a sufficient length of time.” Firstly, this is scanning of the joining node and not the network node as required by the claim. Secondly, this does not disclose scanning at a spatial azimuth and given frequency selected to have **highest probability** of locating the joining node. Rather, it is simply a statement that the scanning performed by the joining node is initially performed on one spatial azimuth and at

one given frequency and if this is unsuccessful, scanning on another spatial azimuth and frequency.

Similarly, the statement at page 28, lines 1 to 2 does not disclose the network node subsequently scanning on sectors of *lower probability* of locating the joining node. Rather, it states that if the joining node (i.e. not the existing network node as required by claim 37) does not receive an invitation signal, it has to scan to the next frequency and azimuth. It makes no mention of whether or not the frequencies and direction of scanning are selected according to probability of the establishment of connection. The Examiner failed to show where the feature of selecting spatial azimuths and frequencies according to probability of establishment of connection is disclosed in Berger. This is because there is absolutely no disclosure or suggestion of this feature in Berger. These distinctions provide clear advantages over the cited prior art in terms of minimizing the time required for a join to occur.

The examiner states in the final paragraph in page 11 of the Final Office Action that there is “no telling in claim 37 who or what is doing the scanning.” The Applicants again respectfully point out that this is incorrect. Claim 37 specifically requires the feature of “at the at least one network node, to initiate communication with the joining node, scanning on a first sector with highest probability of locating the joining node...” This is a clear statement that the scanning occurs at the at least one network node.

In other words, the cited passage in Berger states that “the radio node [the joining node] listens for an invitation signal in a spatial azimuth at a given frequency for a sufficient length of time...” and continues by stating that “the radio node [again, the joining node] receives an invitation which includes a schedule for the first exchange with the inviting radio node [i.e. the existing network node].” Clearly, the node that is listening for an invitation signal is the node being invited to join the network, i.e. a joining node. Therefore, claim 37

requires scanning **at the at least on network node** and is at least by virtue of this distinction clearly different from the disclosure of Berger.

Accordingly, the cited passage in Berger (or indeed any of the document) does not refer to (1) the action of an existing network node; or, (2) probabilities being used to determine which of the sectors or frequencies should be used to establish communication with a joining node, as claimed in present claim 37. That is, claim 37 is not anticipated by Berger. Therefore, the Applicants respectfully request that the examiner's rejection of claim 37 under 35 U.S.C. 102(a) be withdrawn.

Claims 38-42 depend from claim 37. Consequently, claims 37-42 are patentable at least for the reasons stated above with respect to claim 37 and for the addition features recited therein. Therefore, the Applicants respectfully request that the rejection of claims 38-42 under §102(a) be withdrawn.

On pages 9 and 10 of the Final Office Action, the examiner rejects claim 43. Specifically, the examiner states that the features of claim 43 are all disclosed in Berger. The Applicants respectfully point out that this is an incorrect statement. Claim 43 requires scheduling transmission of data packets by inviting network nodes. The data packets constitute what is referred to in the claim as "spectral activity." The claim then requires "at a joining node... scanning defined frequency channels and... spatial directions to identify radio frequency activity of the inviting networks nodes... and (by implication once this has been done) tuning to a defined frequency channel in the identified spatial direction to receive an **invitation packet...**"

In other words, the method requires both data packets defining spectral activity and separately, an invitation packet. There is no disclosure in Berger of a method having these steps. The Examiner must appreciate that there is a difference between the data packets

generated to create spectral activity and the invitation packet received by the joining node and transmitted by the inviting network nodes.

The examiner cites page 27, lines 10 to 12 of Berger as disclosing a radio node listening for admission invitation signals from potential neighbors. What this passage does not disclose is a joining node listening for spectral activity generated by the inviting nodes and then, separately receiving an invitation packet, as claimed in present claim 43.

Accordingly, the cited passage in Berger (or indeed any of the document) does not refer to (1) scheduling transmission of data packets by inviting network nodes, the data packets constituting what is referred to in the claim as “spectral activity”; or, (2) at a joining node... scanning defined frequency channels and... spatial directions to identify radio frequency activity of the inviting networks nodes... and (by implication once this has been done) tuning to a defined frequency channel in the identified spatial direction to receive an **invitation packet...**”, which is different from the “spectral activity.” That is, claim 43 is not anticipated by Berger and clearly novel and non-obvious in view of the disclosure of Berger.

Therefore, the Applicants respectfully request that the examiner’s rejection of claim 43 under 35 U.S.C. 102(a) be withdrawn.

Claims 44-45 depend from claim 43. Consequently, claims 44-45 are patentable at least for the reasons stated above with respect to claim 43 and for the addition features recited therein. Therefore, the Applicants respectfully request that the rejection of claims 44-45 under §102(a) be withdrawn.

All objections and rejections have been addressed. It is respectfully submitted,  
therefore, that the present application is now in condition for Allowance.

Respectfully submitted,

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